Claims

1. An isolated nucleic acid molecule comprising a sequence substantially identical to SEQ ID NO:252.

2. The isolated nucleic acid molecule of claim 1, wherein said nucleic acid molecule comprises the sequence shown in SEQ ID NO:252

3. An isolated nucleic acid molecule comprising a sequence substantially identical to SEQ ID NO:105.

4. The isolated nucleic acid molecule of claim 3, wherein said nucleic acid molecule comprises the sequence shown in SEQ ID NO:105.

5. An isolated nucleic acid molecule comprising a sequence substantially identical to SEQ ID NO:106.

6. The isolated nucleic acid molecule of claim 5, wherein said nucleic acid molecule comprises the sequence shown in SEQ ID NO:106.

7. A substantially pure polypeptide comprising an amino acid sequence that is substantially identical to the amino acid sequence of SEQ ID NO:253.

8. The substantially pure polypeptide of claim 7, wherein said amino acid sequence comprises the sequence shown in SEQ ID NO:253.

9. A substantially pure polypeptide comprising an amino acid sequence that is substantially identical to the amino acid sequence of SEQ ID NO:107.

10. The substantially pure polypeptide of claim 9, wherein said amino acid sequence comprises the sequence shown in SEQ ID NO:107.

11. A substantially pure polypeptide comprising an amino acid sequence that is substantially identical to the amino acid sequence of SEQ ID NO:108.

12. The substantially pure polypeptide of claim 11, wherein said amino acid sequence comprises the sequence shown in SEQ ID NO:108.

13. A method for identifying a compound which is capable of decreasing the expression of a pathogenic virulence factor, said method comprising the steps of:

(a) providing a pathogenic cell expressing a nucleic acid molecule of claim 1; and

(b) contacting said pathogenic cell with a candidate compound, a decrease in expression of said nucleic acid molecule following contact with said candidate compound identifying a compound which decreases the expression of a pathogenic virulence factor.

14. The method of claim 13, wherein said pathogenic cell infects a mammal.

15. The method of claim 13, wherein said pathogenic cell infects a plant.

16. A method for identifying a compound which is capable of decreasing the expression of a pathogenic virulence factor, said method comprising the steps of:

(a) providing a pathogenic cell expressing a nucleic acid molecule of claim 3; and

(b) contacting said pathogenic cell with a candidate compound, a decrease in expression of said nucleic acid molecule following contact with said candidate compound identifying a compound which decreases the expression of a pathogenic virulence factor.

17. The method of claim 16, wherein said pathogenic cell infects a mammal.

18. The method of claim 16, wherein said pathogenic cell infects a plant.

19. A method for identifying a compound which is capable of decreasing the expression of a pathogenic virulence factor, said method comprising the steps of:

(a) providing a pathogenic cell expressing a nucleic acid molecule of claim 5; and

(b) contacting said pathogenic cell with a candidate compound, a decrease in expression of said nucleic acid molecule following contact with said candidate compound identifying a compound which decreases the expression of a pathogenic virulence factor.

20. The method of claim 19, wherein said pathogenic cell infects a mammal.

21. The method of claim 19, wherein said pathogenic cell infects a plant.

22. A method for identifying a compound which binds a polypeptide, said method comprising the steps of:

(a) contacting a candidate compound with a substantially pure polypeptide comprising an amino acid sequence of claim 7 under conditions that allow binding; and

(b) detecting binding of the candidate compound to the polypeptide.

23. A method for identifying a compound which binds a polypeptide, said method comprising the steps of:

(a) contacting a candidate compound with a substantially pure polypeptide comprising an amino acid sequence of claim 9 under conditions that allow binding; and

(b) detecting binding of the candidate compound to the polypeptide.

24. A method for identifying a compound which binds a polypeptide, said method comprising the steps of:

(a) contacting a candidate compound with a substantially pure polypeptide comprising an amino acid sequence of claim 11 under conditions that allow binding; and

(b) detecting binding of the candidate compound to the polypeptide.

25. A method of treating a pathogenic infection in mammal, said method comprising the steps of:

(a) identifying a mammal having a pathogenic infection; and

(b) administering to said mammal a therapeutically effective amount of a composition which inhibits the expression or activity of a polypeptide encoded by a nucleic acid molecule of claim 1 in said pathogen.

26. A method of treating a pathogenic infection in mammal, said method comprising the steps of:

(a) identifying a mammal having a pathogenic infection; and

(b) administering to said mammal a therapeutically effective amount of a composition which inhibits the expression or activity of a polypeptide encoded by a nucleic acid molecule of claim 3 in said pathogen.

27. The method of claim 26, wherein said pathogen is *Pseudomonas aeruginosa.*

28. A method of treating a pathogenic infection in mammal, said method comprising the steps of:

(a) identifying a mammal having a pathogenic infection; and

(b) administering to said mammal a therapeutically effective amount of a composition which inhibits the expression or activity of a polypeptide encoded by a nucleic acid molecule of claim 5 in said pathogen.

29. The method of claim 28, wherein said pathogen is *Pseudomonas aeruginosa.*

30. A method of treating a pathogenic infection in a mammal, said method

comprising the steps of:

(a) identifying a mammal having a pathogenic infection; and

(b) administering to said mammal a therapeutically effective amount of a composition which binds and inhibits a polypeptide encoded by an amino acid sequence of claim 5.

31. The method of claim 30, wherein said pathogen is *Pseudomonas aeruginosa.*

32. A method of treating a pathogenic infection in a mammal, said method comprising the steps of:

(a) identifying a mammal having a pathogenic infection; and

(b) administering to said mammal a therapeutically effective amount of a composition which binds and inhibits a polypeptide encoded by an amino acid sequence of claim 7.

33. The method of claim 32, wherein said pathogen infection is caused by *Pseudomonas aeruginosa.*

34. A method of treating a pathogenic infection in a mammal, said method comprising the steps of:

(a) identifying a mammal having a pathogenic infection; and

(b) administering to said mammal a therapeutically effective amount of a composition which binds and inhibits a polypeptide encoded by an amino acid sequence of claim 9.

35. The method of claim 34, wherein said pathogen infection is caused by *Pseudomonas aeruginosa.*

36. A method of treating a pathogenic infection in mammal, said method

comprising the steps of:

(a) identifying a mammal having a pathogenic infection; and

(b) administering to said mammal a therapeutically effective amount of a composition which binds and inhibits a substantially pure polypeptide comprising an amino acid sequence of claim 11.

37. The method of claim 36, wherein said pathogen infection is caused by *Pseudomonas aeruginosa.*

38. A method of identifying a compound which inhibits the virulence of a *Pseudomonas* cell, said method comprising the steps of:

(a) providing a *Pseudomonas* cell;

(b) contacting said cell with a candidate compound; and

(c) detecting the presence of a phenazine, wherein a decrease in said phenazine relative to an untreated control cell is an indication that the compound inhibits the virulence of said *Pseudomonas* cell.

39. The method of claim 38, wherein said cell is *Pseudomonas aeruginosa.*

40. The method of claim 38, wherein said phenazine is detected by spectroscopy.

41. The method of claim 38, wherein said phenazine is a pyocyanin.

42. The method of claim 41, wherein said pyocyanin is detected by measuring the absorbance at 520 nm

43. The method of claim 38, wherein said cell is present in a cell culture.